

***Raillietnema brachyspiculatum* sp. n. (Nematoda: Cosmocercidae) from *Lepidophyma tuxtlae* (Sauria: Xantusiidae) from México**

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ABSTRACT: *Raillietnema brachyspiculatum* sp. n. (Nematoda: Cosmoceroidea), a new nematode from the large intestine of *Lepidophyma tuxtlae* collected at Los Tuxtlas, Veracruz, México, is described and illustrated. It is distinguished from 4 other Neotropical species by number of male caudal papillae, shorter spicule length, and smaller egg size.

KEY WORDS: *Raillietnema brachyspiculatum* sp. n., nematoda, *Lepidophyma tuxtlae*, lizard.

The genus *Raillietnema* was established by Travassos (1927) for those species of cosmoceroid nematodes possessing simple amphidelphic uteri containing few but relatively large ova. *Oxyromatium simplex* Travassos, 1925 from *Hyla faber* Wied-Neuwied, 1821 of Brazil was made the type species. There are currently 21 described species of *Raillietnema*, 14 species from the Ethiopian Realm, 5 from the Neotropical Realm, 1 from the Nearctic Realm, and 1 from the Oriental Realm (Baker, 1987). *Raillietnema brachyspiculatum* sp. n. is the sixth species to be described from the Neotropical Realm.

Lepidophyma tuxtlae Werler and Shannon, 1957, Tuxtla tropical night lizard (*Lagartija nocturna* de Los Tuxtlas), was originally described from Veracruz and is also currently known from the Mexican states of Chiapas and Oaxaca (Flores-Villela and Gerez, 1994). It is an arboreal lizard occurring at elevations from sea level to 1,500 m (Vogt et al., 1997) but restricted to lower tropical lands, regions 6 and 7 of Flores-Villela (1993), which have a temperate humid climate with a wet summer and dry winter.

Materials and Methods

Nematodes were obtained from the large intestines of 3 *L. tuxtlae* hand collected at night at Los Tuxtlas, Veracruz, México (18°35'N, 95°05'W), during April, May, and November 1995. Lizards were fixed in 10% formalin and dissected in 1996. Nematodes were re-

moved and stored in 70% ethanol. They were placed in glycerol on a glass slide, allowed to clear, and examined with a light microscope. Measurements are given in micrometers unless otherwise noted.

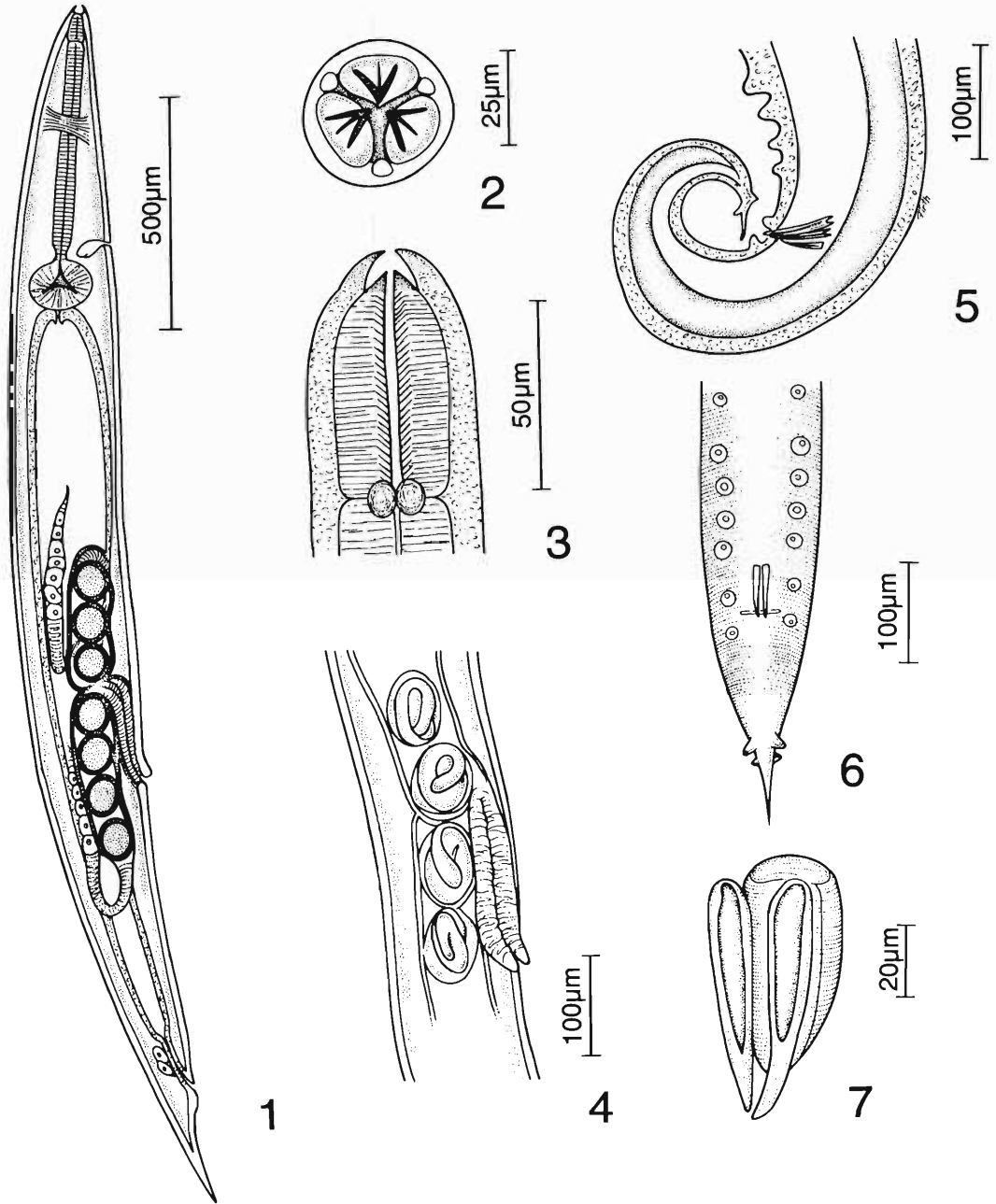
Results

The *L. tuxtlae* collected in April was found to contain 211 individuals of an undescribed species of *Raillietnema*; the May specimen harbored 3 *Spauligodon oxkutzcabiensis* (Chitwood, 1938) Skrjabin, Schikhobalova and Lagodovskaja, 1960; the November specimen contained 86 individuals belonging to the genus *Raillietnema* and 4 *S. oxkutzcabiensis*. A description of the new species of *Raillietnema* follows.

***Raillietnema brachyspiculatum* sp. n. (Figs. 1–7)**

DESCRIPTION: Cosmocercidea, Cosmocercidae, Cosmocercinae. Cylindrical nematodes with finely longitudinally striated cuticle. Males and females of similar length, maximum width occurring at level of esophageal bulb. Lateral alae present, maximum width 2, extending from level of anterior end of esophagus to tail in both sexes. Oral opening triangular, lips large, vestibule and pharynx lined with cuticle. Esophagus composed of anterior cylindrical corpus and posterior isthmus with bulb. Intestine slightly swollen anteriorly, rectilinear; junction with rectum supported by 3 gland cells.

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Figures 1–7. *Raillietnema brachyspiculatum* sp. n. 1. Female, entire. 2. Female, *en face*. 3. Female, anterior end, lateral view. 4. Female, vulvar region. 5. Male, posterior end, lateral view. 6. Male, posterior end, ventral view. 7. Spicules and gubernaculum.

MALE (10 specimens; mean measurement and range in micrometers): Total length 2,150 (1,910–2,350); width at esophageal bulb 120 (90–130); body tapering posteriorly. Esophagus

plus bulb 552 (491–601); bulb length 85 (77–91); bulb width 80 (74–91); pharynx 48 (43–51). Nerve ring, 209 (153–242) and excretory pore 424 (383–459) from anterior end. Spicules

Table 1. Geographical distribution and selected characteristics of species of *Raillietnema*.

Biogeographic Realm <i>Raillietnema</i> species	Papillae total: precloacal, postcloacal	Spicule length (μm)	Egg size ($\mu\text{m} \times \mu\text{m}$)	Reference
Ethiopian Realm				
<i>R. baina</i> Petter, 1966	36: 26, 10	196–210	300 \times 250	Petter, 1966
<i>R. chamaeleo</i> Fitzsimmons, 1961	20: 14, 6	35–41	90 \times 63	Fitzsimmons, 1961
<i>R. deblocki</i> Chabaud and Brygoo, 1962	24: 12, 12	165	Not given	Chabaud and Brygoo, 1962
<i>R. dupuisi</i> Chabaud and Brygoo, 1962	20: 10, 10	140–160	Not given	Chabaud and Brygoo, 1962
<i>R. kinixys</i> Fitzsimmons, 1964	26: 14, 12	340	260 \times 160	Fitzsimmons, 1964
<i>R. loveridgei</i> (Sandground, 1928)	6: 2, 4	206–210	150 \times 84	Sandground, 1928
<i>R. multipapillata</i> Walton, 1940	28: 20, 8	280–291	127 \times 111	Walton, 1940
<i>R. oligogenos</i> Chabaud and Brygoo, 1962	29: 19, 10	80	Not given	Chabaud and Brygoo, 1962
<i>R. parapetterae</i> Prod'hon, 1968	34: 19, 15	170–180	110 \times 60	Prod'hon, 1968
<i>R. petterae</i> Prod'hon, 1968	33: 17, 16	180–190	120 \times 60	Prod'hon, 1968
<i>R. travassosi</i> Chabaud and Brygoo, 1962	21: 13, 8	80	Not given	Chabaud and Brygoo, 1962
<i>R. synodontisi</i> Vassiliadès, 1973	31: 21, 10	94	180 \times 110	Vassiliadès, 1973
<i>R. vicarians</i> Chabaud and Brygoo, 1962	29: 21, 8	32	Not given	Chabaud and Brygoo, 1962
<i>R. zonosauri</i> Caballero, 1968	26: 16, 10	280	120 \times 70	Caballero, 1968
Nearctic Realm				
<i>R. longicaudata</i> (Walton, 1929)	31: 17, 14	179	163 \times 95	Baker, 1985
Neotropical Realm				
<i>R. baylisi</i> (Walton, 1933)	16: 8, 8	212	120 \times 45	Walton, 1933
<i>R. brachyspiculatum</i> sp. n.	18: 12, 6	57–63	97 \times 64	This paper
<i>R. gubernaculatum</i> Freitas and Ibanez, 1965	16: 10, 6	206–253	123 \times 53	Gomes, 1967
<i>R. kritscheri</i> Moravec, Maldonado, and Lopez, 1993	25: 17, 8	81–120	220 \times 116	Moravec et al., 1993
<i>R. simplex</i> (Travassos, 1925)	20: 4, 16	218–221	230 \times 105	Walton, 1940
<i>R. spectans</i> Gomes, 1964	20: 10, 10	230–250	115 \times 63	Gomes, 1964
Oriental Realm				
<i>R. rhacophori</i> Yuen, 1965	23: 14, 9	200–230	220 \times 120	Yuen, 1965

60 (57–63) in length, ventrally curved, equal and similar in morphology, slender and tapering gradually from their proximal ends to a distal point. Gubernaculatum 41 (37–46). Conical tail 490 (459–561) usually ventrally coiled in tight spiral and terminating in fine point. Nine pairs of sessile papillae, 6 preanal, 3 postanal. Anteriormost pair of preanal papillae often small, next 4 pairs equidistant from each other, posterior pair just anterior to cloaca; anteriormost pair of postcloacal papillae just posterior to cloaca, remaining 2 pair on tail filament.

FEMALE (10 gravid specimens): Small, white nematodes tapering posteriorly. Length, 2,420 (2,090–2,810). Width at esophageal bulb 130 (110–150). Esophagus plus bulb 636 (550–700); bulb length 108 (91–120); bulb width 96 (83–108); sclerotized pharynx 56 (40–68). Nerve ring 226 (204–255) and excretory pore 467 (383–510) from anterior end. Amphidelphic

uterus containing reduced number of large eggs and supporting short ovaries. Vulva, 1,500 (1,320–1,580) from anterior end, salient anterior lip present. Thick-walled muscular ovijector extending anteriorly 315 (300–330) joining 2 thin-walled uteri, one directed anteriorly and the other posteriorly. Each ovary folded back over its respective uterus such that end of anterior ovary occurs about midbody and end of the posterior ovary lies anterior to vulva. Eggs ovoid 97 (90–102) by 64 (57–70), arranged linearly and larvated at time of deposition; maximum number of eggs per individual 17. Tail 136 (114–160) in length; conical and pointed.

TYPE SPECIMENS: Holotype. Male (Colección Nacional de Helmintos (CNHE), Instituto de Biología de la Universidad Nacional Autónoma de México, CNHE-3190; Allotype: Female CNHE-3191; Paratypes, 9 males, 9 females, CNHE-3192. Voucher specimens were deposited

in the United States National Parasite Collection, Beltsville, Maryland, USNPC No. 87528.

TYPE HOST: *Lepidophyma tuxtlae* Werler and Shannon, 1957, Xantusiidae, April 1995.

SITE OF INFECTION: Large intestine.

TYPE LOCALITY: Los Tuxtlas, Veracruz, México, 18°35'N, 95°05'W.

ETYMOLOGY: The specific name refers to the size of the spicules, which are shorter than of any of the Neotropical species.

Discussion

The assignment of the Los Tuxtlas specimens to the genus *Raillietnema* is based upon the morphology of the female reproductive system. The eggs of *R. brachyspiculatum* sp. n. and *R. chamaeleo* are about the same size (<100 µm); these 2 species have eggs that are smaller than any of the other described species of *Raillietnema* (Table 1). Possession of few large eggs is a characteristic of the genus.

Species of *Raillietnema* can be separated on the basis of male caudal papillae arrangement and length of spicule (Table 1). Six species occur in the Neotropical Realm, namely, *R. baylisi*, *R. brachyspiculatum* sp. n., *R. gubernaculatum*, *R. kritschneri*, *R. simples*, and *R. spectans*. Males of *R. kritschneri* have 25 papillae, *R. baylisi* 22 papillae; *R. simples* and *R. spectans* have 20 each but arranged differently. *Raillietnema brachyspiculatum* has 18 papillae, *R. gubernaculatum* has 16. In females of *R. brachyspiculatum*, *R. gubernaculatum*, *R. kritschneri*, and *R. spectans*, the anterior lip of the vulva protrudes beyond the body wall; it does not protrude in *R. baylisi* or *R. simples*. Lateral alae are absent in *R. kritschneri* and present in *R. brachyspiculatum*, *R. gubernaculatum*, and *R. spectans*. Egg size differentiates *R. brachyspiculatum* from the latter 2 species.

The genus now contains 22 species (Table 1). *Raillietnema kritschneri* and *R. synodontisi* were described from fish hosts; the other species parasitize amphibians and reptiles.

Acknowledgments

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The New (XVIII) International Congress of Zoology First Announcement

The date of the New Congress has been set for 28 August–3 September 2000, and the venue will be the Faculty of Philosophy at the University of Athens, Greece, under the auspices of the Hellenic Zoological Society. To reverse the present trend of fragmentation of zoology and the crisis in professional zoological education that became rampant after the suspension of the congresses in 1972, we have decided to dedicate this first renewed congress mainly to a number of integrative symposia and general discussions. We call upon you to participate!

Please inform us **by mid-October 1998 of your intention to participate and/or receive further information contained in our First Circular**. Contact Dr. Rosa Polymeni, University of Athens, Department of Biology, Section of Zoology and Marine Biology, 15784 Athens, Greece. Telephone: 31-1-726-4364; fax: 30-1-728-4604; e-mail: rpolyme@biology.db.uoa.gr. The text of the first circular can be accessed and copied from our web page at http://www.york.biosis.org/zrdocs/new_icz/icz18_1.htm.

Diagnostic Parasitology Course

The Diagnostic Parasitology course is being offered 3–14 August 1998 at the Uniformed Services University of the Health Sciences, Bethesda, Maryland 20814-4799. This course will consist of a series of lectures and hands-on laboratory sessions covering the diagnosis of parasitic infections of humans. In addition to the examination of specimens, participants will be able to practice various methods used in the diagnosis of intestinal, blood, and tissue parasitic diseases. Parasitic diseases encountered throughout the world will be included. Slide presentations and video tapes will be available for study. The course will be held on the University's campus, utilizing up-to-date lecture rooms and laboratory facilities. Microscopes will be available on a loan basis, and laboratory supplies will be provided. Certain reference specimens will also be available for personal use.

The registration fee for the 2-wk course is \$1,000. U.S. Government and Military personnel may take the course at a reduced rate. Those interested should register as soon as possible because the number of students will be limited. Previous laboratory experience is recommended.

For further information, contact Dr. John H. Cross, (301) 295-3139, or Ms. Ellen Goldman, (301) 295-3129.